

Clark University

The Central Business District--A Study in Urban Geography

Author(s): George W. Hartman

Source: *Economic Geography*, Vol. 26, No. 4 (Oct., 1950), pp. 237-244

Published by: [Clark University](#)

Stable URL: <http://www.jstor.org/stable/141260>

Accessed: 08/05/2014 12:46

Your use of the JSTOR archive indicates your acceptance of the Terms & Conditions of Use, available at
<http://www.jstor.org/page/info/about/policies/terms.jsp>

JSTOR is a not-for-profit service that helps scholars, researchers, and students discover, use, and build upon a wide range of content in a trusted digital archive. We use information technology and tools to increase productivity and facilitate new forms of scholarship. For more information about JSTOR, please contact support@jstor.org.



Clark University is collaborating with JSTOR to digitize, preserve and extend access to *Economic Geography*.

<http://www.jstor.org>

ECONOMIC GEOGRAPHY

VOL. 26

OCTOBER, 1950

No. 4

THE CENTRAL BUSINESS DISTRICT—A STUDY IN URBAN GEOGRAPHY

George W. Hartman

Dr. Hartman received his Ph.D. degree from the State University of Iowa where he is now assistant professor of geography. His paper, an outgrowth of his doctoral dissertation, is representative of his field of special interest.

ONE of the more important phases of the study of urban communities is that which deals with the spatial, internal structure of urban centers. The geographer is concerned directly with the distributive arrangement of the activities within each city, and he undertakes an analysis of the structure of individual cities. A comparison of the results of a large number of such studies indicates that individual structures have certain basic elements and associations in common. Patterns and repetitious associations have been distinguished and stated in terms of general types and of general tendencies.¹ The latter, in turn, become valuable guideposts for a more precise measurement of variations and modifications found in each city.

This paper is devoted to a consideration of one phase of the internal structure of cities—namely, an analysis of the central business district. The basic portions of this report are the result of an examination of existing land-use maps and related studies of approximately 40 cities in the United States. These cities present important variations in geographic location, physical site, functions performed, age, and population

size. It is impossible to obtain data for all existing cities, and for that reason the statements that follow undoubtedly will be subject to later modification.

PRIMARY CHARACTERISTICS OF THE CENTRAL BUSINESS DISTRICT

The first substantial developments of "towns and cities" in the United States generally were made at locations and sites most advantageous to trade and commerce. Whether an urban community was established at a junction of overland trade routes, along a navigable stream or water body, at some other inland break-of-bulk or change-of-ownership transportation site, or at some strategic point favorable for mining, manufacturing, or resort activities, the primary focus of internal activities and the major contact with a tributary area was found in the "business district."

As a consequence of offering services not only for the dwellers of the city itself but also for the inhabitants of a larger rural territory and often of a much farther-flung hinterland, the location of the business district with respect to these potential customers is generally predictable. The underlying determinant of the use of the land base is

competition for *strategic* space, and the strongest competitors of all (as shown by the ability to pay higher rents) are the commercial establishments. To the business man dispensing or facilitating the exchange of goods and services, the most advantageous location with respect to *all* activities is in the very midst of those activities. On a uniform land base and without deformation by man-made irregularities, the exact geographical center therefore becomes the most desirable site. The result of such desires and abilities is reflected in land-use maps by the centralized position of the business district in relation to other activities and facilities, and by the intensive commercial use made of the land base in the district.

All types of goods and services may be offered in the central district, but the simplicity or complexity of facilities depends primarily upon the number and kind of customers. In small urban centers of agricultural districts, for example, low-cost necessity or convenience goods and non-specialized services are most frequently encountered. Larger cities, on the other hand, offer additional facilities to a larger clientele. As

a city grows in size and importance, the central district tends to assume more and more the function of a shopping and style center as well as of a specialized personal and professional service district. A statement found in a recent study by the United States Department of Commerce is of significance in this respect: in large districts department stores oftentimes are dominant in total sales, but they are always outnumbered by narrow-line shopping stores which specialize in the sale of goods such as shoes, dresses, hosiery, and men's clothing.²

GEOMETRIC PATTERNS OF THE CENTRAL BUSINESS DISTRICT

The Circle.—The actual shape of the central business district varies considerably from city to city. The variations, however, are the result of local conditions and do not stem from a multiplicity of patterns. The concentric zone hypothesis as outlined by Burgess³ suggests that, in the absence of topographical or man-made barriers, the geometric pattern is a circle (see Fig. 1-A). This belief appears to be based upon measurement of relative distances from the center: each point on the periphery of a circle is as close to the center as any other point similarly situated, and with the desire for central position on the part of commercial activities the entire business district assumes a circular shape around the central point.

It might be argued that developing idealized shapes on the basis of distance measurements alone is of questionable value in that the importance of relative time involved in travel from one point to other points is ignored. That time and distance factors are not synonymous in reality hardly needs demonstrating here. The time-distance relationship as affecting business district configurations, however, is an exceedingly variable one,

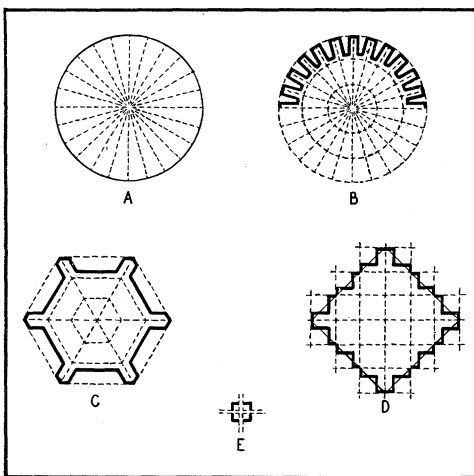


FIG. 1. Geometric patterns of the central business district.

and such variations will be considered later under the heading "Variations from Idealized Shapes."

The Star-Like Pattern.—Actual movements of goods and people, however, ordinarily cannot follow the shortest air-line paths to and from the center. To accomplish this end, it would be necessary for every portion of the area to be a part of some straight-line route to the center, an impracticable and impossible feat because of the presence of buildings and other space occupiers. Only the streets and sidewalks may be used. The circular pattern is most nearly approached in actuality where the major transportation routes are of the radial type, and then only if the number of radial streets is very large (Fig. 1-B). The periphery of the central district reaches its greatest outward extent along each of the radial streets, and consequent inward sagging occurs in the interstitial areas. The width of these interstitial zones varies inversely with the number of routes to the center; an actual circular shape requires innumerable radial streets.

As the number of radial thoroughfares decreases, however, the peripheral configuration becomes less circular and the areas where sagging occurs become larger and larger. A small number of such streets imposes a pattern which is more star-like in shape (Fig. 1-C). It may be noted, therefore, that circular and star-like patterns are similar in nature. They differ only in the number of radial thoroughfares assumed.

The Diamond Pattern.—Many of the cities in the United States have not developed under a system of radial streets. A large majority have developed under the grid or gridiron method of platting streets and blocks. Even in cities that now have a certain number of radial thoroughfares superimposed on the original grid to ease the flow of

traffic, the thoroughfares generally terminate at the periphery of the district with the latter retaining the rectangular plan. It may be noted that under such a system, two of the streets may be considered to be radial since they intersect at the center. The important difference, however, is that a larger choice of alternate shortest-distance routes is offered under the grid.

Again assuming that central location is desirable, if equal distances from the center are measured along all possible routes of travel, a pattern is outlined which resembles a tilted square or a diamond with each of the four corners resting on one of the direct-route streets (Fig. 1-D).

Finally, if the star or diamond patterns are reduced to their simplest form (i.e., a minimum number of business establishments in which symmetry of shape is maintained), the resultant geometrical pattern becomes identical with that associated with nucleated hamlets—the crossroads square (Fig. 1-E).

CORRELATION OF BUSINESS DISTRICT AND TRADE AREA PATTERNS

Recognition has been given to the fact that the spatial shape of the central district develops not only in response to the needs of the city dweller but also of the people living in the trade area around the city. The latter becomes particularly important in agricultural areas where a significant portion of the total customers of commercial enterprises resides outside the city. While a detailed analysis of such relationships is beyond the scope of this study, the following considerations are believed to be pertinent.

The Hexagon and Circle.—Under the apparent assumptions of a homogeneous land base, equal distances between villages, towns and cities, air-line or shortest-distance routes of travel, and a rural

population that has no preference except to frequent the nearest urban community, it has been demonstrated that the hexagon rather than the circle is the ideal trade-area configuration.⁴ The hexagonal pattern is most efficient as it leaves no interstitial areas unserved. The shape of the business district presumably is affected by that pattern, particularly if the rural inhabitants constitute a significant portion of the total customers being served. If one ignores for the moment the necessity of streets and buildings, the circular pattern of the central district is most efficient in serving the hexagonal trade area (Fig. 2-A).

The Hexagon and Star.—If the assumption of air-line routes of travel is replaced by one of a system of radial highways and streets converging in the various business centers, the hexagon remains as the ideal trade-area configuration even though “zones of indifference” appear along the margins (Fig. 2-B). It has been demonstrated previously, however, that the central district no longer maintains a circular shape under such a street system. The star-like district best serves the inhabitants of the city and of the hexagonal tributary area under a regular system of radial thoroughfares.

The Square and Diamond.—Wendell Smith,⁵ in investigating the State of Iowa for merchandising possibilities, points out that if a regular grid system of highways and streets is assumed, cities cannot be equally spaced and their trade areas ideally assume the shape of a square (Fig. 2-C). The square pattern appears to be applicable in many sections of the United States because the rectangular method of land survey theoretically would tend to produce a north-south, east-west alignment of transportation routes and cities. Under such conditions, rural customers travel

to and from the centers of cities principally by the two converging streets of the usual grid system. The diamond pattern appears to be more efficient in serving the square-like hinterland, as the farthest extensions of the central business district are along these streets.

As land-use maps of various cities indicate, linear commercial developments often appear along the main thoroughfares for considerable distances beyond the central core. This development appears to be the result of a desire on the part of certain establishments to obtain more space for their activities and particularly to move out in the direction of the greatest number of concentrated customers. Such extensions, however, are not considered as a part of the central business district as true *central* location no longer is maintained with respect to *all* potential customers.

VARIATIONS FROM IDEALIZED SHAPES

Geometric patterns of central business districts have been presented above as idealized, spatial arrangements of commercial activities under certain basic

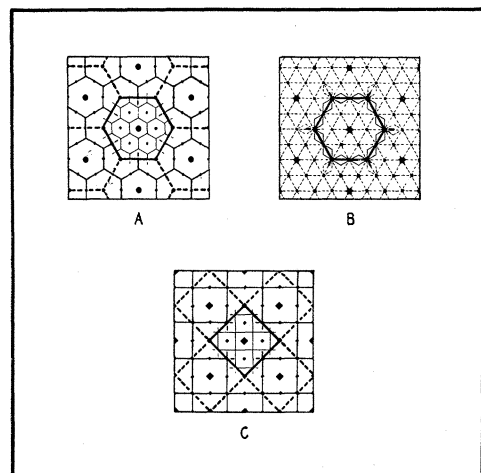


FIG. 2. Related geometric patterns of the central business district and trade area.

assumptions. These assumptions may be restated in clearer form: a homogeneous land base, unity and regularity of a radial or grid transportation system with arteries of travel that have equal strength in facilitating the flow of traffic, recognition on the part of commercial enterprises of the desirability of central position with respect to all potential customers, and symmetrical development of the central district unfettered by man-made distortions.

An analysis of actual business districts, however, indicates that local conditions impose modifications of these assumptions. No district actually conforms in all respects to any one of the theoretical shapes; in fact, most districts evidence a number of distorting influences. In brief, asymmetrical rather than symmetrical shapes result in local variations in each city (see Fig. 3 for six examples of the districts studied).

The Physical Site.—Irregularities of the land base have important influences on the shapes of central districts even though in some cities expensive alterations of the site have been undertaken. It is generally understood that customers dislike to walk up slopes so preference is made for level ground or at least slight relief. Costs of building construction also vary considerably according to site conditions with the result that certain sites have preference over others. Low-lying areas adjacent to water courses usually are avoided by commercial interests because of drainage and flood control problems. Rivers, canals, lakes, bays, underlying surface conditions, and abrupt variations in relief have important effects on the configuration of the central district in most cities.

A level area immediately surrounded by formidable barriers to outward expansion tends to compress commercial nucleation, resulting in more intensive

and vertical use of the land (e.g., Johnstown, Pa.). On the other hand, a steep, narrow valley site may have the effect of weakening central growth by forcing inordinate elongation of the central district (Fitchburg, Mass.). A low-land area with several low-level approaches may be effective in combining nucleation with linear star-like extensions (Syracuse, N. Y.). If competition for space in the central district becomes acute in the face of a physical barrier, double nucleation or an interrupted district may develop. Little Rock, Ark., and Waterloo, Iowa, districts, for example, have interruptions necessitated by a river barrier.

The physical site also indirectly affects shapes of central districts by influencing other variables such as street platting methods and the direction and volume of traffic flow.

Platting Methods.—Alterations in the basic street and block plan in many districts tend to distort the tendency for symmetrical shape. Irregularities in the length, direction, and width of streets coupled with the size and shape of blocks are particularly effective in influencing the shape of the districts in Reading, Pa., and Savannah, Ga. They also help to produce distortions in Durham, N. C., New Brunswick, N. J., and Rochester, N. Y. Again, an abrupt change in the method of orienting the regular system of streets and blocks in Peoria, Ill., is a major influence in sharpening the tendency toward a diamond shape on the west and northwest sides of the central district. Variations appear in Montgomery, Ala., and Waterloo, Iowa, for the same reason.

Traffic Flow.—Richard Hurd⁶ and Homer Hoyt⁷ both contend that cities tend to expand outward along various axes (e.g., along certain thoroughfares that offer the best travel facilities) as well as by concentric growth around a



FIG. 3. Central business districts of six selected cities: A, Stockton, Calif.; B, Rochester, N. Y.; C, Kansas City, Mo.; D, Peoria, Ill.; E, Macon, Ga.; F, Little Rock, Ark. (Sources from which figures obtained: A, "Land Use Survey of City and Suburban Area, 1944," City Planning Commission, Stockton, Calif.; B, "Land Use Map of the City of Rochester," courtesy of the Department of Commerce, Rochester; C, "Commercial Areas Map of Kansas City, Mo.," courtesy of the Kansas CityPlan Commission; D, "Real Property Survey and Low Income Housing Area Survey, Peoria, Ill., 1939-41," W.P.A., W.P. 20221, O.P. 65-1-54-195; E, "A Graphic Presentation of the Real Property Survey of Metropolitan Macon, 1940," W.P.A., O.P. 665-34-3-45; F, "Real Property Survey and Low Income Housing Area Survey, Greater Little Rock, Arkansas, 1940," W.P.A., W.P. 5845-3.)

central point or points. Resultant linear arrangements sometimes occur even in the case of *centralized* commercial activities. This is especially true when the flow of traffic is concentrated along certain routes and commercial facilities select sites in juxtaposition for convenient location.

Unequal traffic flow may result from any number of factors—irregularities in the physical site and in the platting of streets and blocks, the peculiarities of subdivision in which jogs, discontinuities, and dead-ends appear on some streets, the improvement and widening of only certain streets leading to and from the district, the use of certain streets by public conveyances, the uneven distribution of parking facilities for private vehicles, and the irregular distribution of potential customers within both the city and the tributary area. Variations of this type produce configurational distortions of central districts in varying degrees, particularly because the time spent in travel from one place to another becomes more important than the distance involved in the travel.

In extreme cases, the center of commercial activities may not be a central point or intersection but may become elongated in one direction. For example, one thoroughfare may become dominant over all others with the result that commercial enterprises choose sites adjacent to it in linear fashion. In this instance, elongation of the district appears parallel to the thoroughfare and flattening or constriction occurs at right angles to the route. "String-town" or "shoelace" are terms commonly applied to cases of this type. The central districts of Reading, Pa., Mason City, Iowa, Lafayette, La., and Vancouver, Wash., are examples of a tendency toward single-street dominance. The districts of Sandusky, Ohio, and Savannah, Ga., represent a linear development which

parallels lake and water transportation facilities. Fitchburg and Webster, Mass., have excellent representations of a combination of single-street and river dominance (the latter producing a linear commercial district in conjunction with non-nucleated manufacturing dependent on the river for water power). Centers which have developed at railway transportation stops often develop linearly (Ames, Iowa), and commercial districts in resort towns along lake and ocean fronts often develop in similar fashion to serve the needs of their customers.

Two or three routes of travel may become dominant in the cities, resulting in asymmetrical variations. As examples, Provo, Utah, and St. Petersburg, Fla., have districts which have developed almost as a "T," and the south portion of the district in Little Rock, Ark., is under the influence of two major streets which parallel each other.

Additional Distortions.—Variations in the shapes of central districts may be the result of other factors that are equally important in single instances to those already enumerated. Commercial structures vary greatly in size, particularly on the margins of the district, and such irregularities cause variations to appear when configurations are examined in detail. Trial and error methods of selecting sites for the construction of new buildings, land speculation, private desires of the individual, and the needs of the moment produce bulging in certain places and sagging in others. The outward growth of central districts as new commercial activities come into existence usually does not occur in symmetrical fashion.

Railway rights-of-way extending along one or more sides of the original nucleation may become a barrier to expansion in those directions (e.g., Macon, Ga.). Wholesale establishments, warehouses, and certain industrial activities com-

monly select sites adjacent to such rights-of-way. An interruption of the district may appear if wide strips of railway property are bridged successfully (Yakima, Wash.). In addition, parks, schools, various political structures, and other governmental uses of the land marginal to the district may block growth in one or more directions (Iowa City, Iowa, Raleigh, N. C., and Santa Fe, N. M.).

Bulges or outward extensions also may appear on one or more sides of the central district. In some cases, they appear to result from the desire of certain types of businesses to locate on one side of the district to be near other important uses of the land (state political buildings, nucleated railway or water facilities). The demand for absolute central position with respect to all activities may not be as strong as previously stated for certain types of commercial enterprises. Financial and managerial sections appear in our largest cities on one side of the central district resulting in distortions of peripheral shapes. The desire for central position for other types of enterprises may be offset by the desire to move out in the direction of the greatest number of concentrated customers (e.g., retail stores selling specialized, high cost articles to upper-income families). As long as such

enterprises remain in the central district they *must* be considered as a part of centralized activities, but such developments result in bulges and sags in the shape of the district. Alterations of these types are apparent particularly in large metropolitan cities.

CONCLUSIONS

Thus it is seen that each central business district has a spatial shape which in detail appears to be unique. No specific district appears quite like any other district. In spite of the great complexity and irregularity of shapes, however, definite geometric patterns are discernable. This arises from the fact that centralized commercial activities by their very nature operate primarily under the same principle—namely, to choose central positions with respect to all internal and external activities of the city. The multiplicity of actual shapes of central districts results from local conditions which are peculiar in detail only to themselves; it is the latter conditions that produce variations from the diamond and star patterns. A geographic analysis of central business districts in various cities is best understood through a study of the various local factors which present deviations from the theoretical spatial arrangement of the central district.

REFERENCES CITED

1. Cf. Chauncy D. Harris and Edward L. Ullman, "The Nature of Cities," *Annals Amer. Acad. Pol. and Soc. Science*, Vol. 242, 1945, pp. 12-17.
2. Helen G. Canoyer, "Selecting a Store Location," U. S. Dept. of Commerce, Bur. of For. and Dom. Commerce, Economic Series No. 56, 1946, p. 24.
3. Ernest W. Burgess, "The Growth of the City," in "The City," edited by Robert E. Park, Ernest W. Burgess, and Roderick D. McKenzie, Chicago, 1925, pp. 47-62.
4. Walter Christaller, "Die Zentralen Orte in Süddeutschland," Jena, 1935; August Losch, "The Nature of Economic Regions," *The South. Econ. Jour.*, Vol. 5, 1938, pp. 71-78; Edward L. Ullman, "A Theory of Location for Cities," *Amer. Journ. of Soc.*, Vol. 46, 1941, pp. 853-864.
5. Wendell R. Smith, "Iowa as a Merchandise Mart," unpublished thesis, State University of Iowa, August, 1941.
6. Richard M. Hurd, "Principles of City Land Values," 4th Ed., New York, 1924, pp. 13-15 and 58-59.
7. Homer Hoyt, "The Structure and Growth of Residential Neighborhoods in American Cities," U. S. Federal Housing Administration, Washington, 1939, pp. 19-20 and 96.